

EXPOSED HEIGHT OF BACK OF WALL ABOVE SLOPE TO BE:  
7" FOR SLOPES OF 1 1/2 : 1 AND 4 : 1  
9" FOR SLOPE 2 : 1

CLASS "A" CONCRETE OR CEMENT RUBBLE MASONRY

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CLASS "A" CONCRETE OR CEMENT RUBBLE MASONRY

WALL AT FOOT OF SLOPE

FRONT ELEVATION

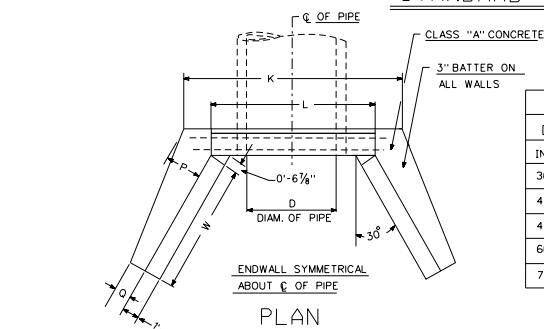
DIMENSIONS AND QUANTITIES FOR ONE ENDWALL BASED ON  $S = D + 2'$

D	S	H	L	BATTER	B	VOL.
INS.	FT.&INS.	FT.&INS.	FT.&INS.	INS./ FT.	FT.&INS.	CU.YD.
12"	1'-2"	4'-6"	4'-6"	2 1/2"	1'-11 1/4"	1.10
15"	1'-5"	4'-9"	5'-6"	2 1/2"	1'-11 3/4"	1.45
18"	1'-8"	5'-0"	6'-6"	2 1/2"	2'-0 1/2"	1.83
24"	2'-2"	5'-6"	8'-6"	2 1/2"	2'-1 3/4"	2.72
30"	2'-8"	6'-0"	10'-6"	2 1/2"	2'-3"	3.79
36"	3'-2"	6'-6"	12'-6"	3"	2'-7 1/2"	5.45
42"	3'-8"	7'-0"	14'-6"	3"	2'-9"	6.40 *
48"	4'-2"	7'-6"	16'-6"	3"	2'-10 1/2"	8.00 *

H = TOTAL HEIGHT OF ENDWALL  
B = BASE  
D = INSIDE DIAMETER OF PIPE  
S = HEIGHT OF SLOPE ABOVE FLOW LINE  
AT FACE OF WALL-MINIMUM = D+2  
L = LENGTH OF WALL = 3S+D  
ALL EDGES OF EXPOSED SURFACES TO BE CHAMFERED APPROXIMATELY ONE INCH.

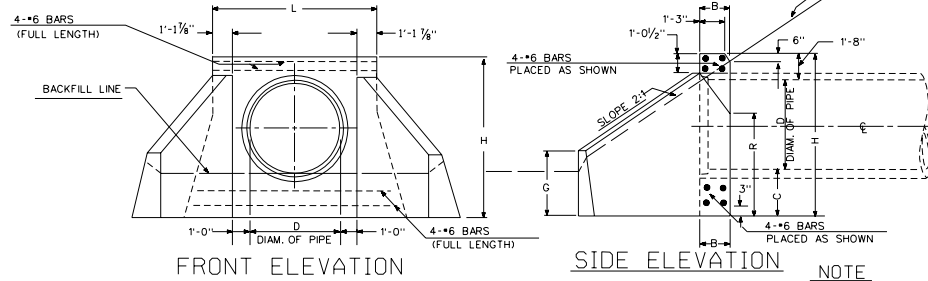
\* VOLUME BASED ON "D" AND WALL THICKNESS AT  $\epsilon$  OF PIPE HAS BEEN DEDUCTED

### STANDARD ENDWALL



DIMENSIONS AND QUANTITIES FOR ONE WING TYPE ENDWALL

D	B	C	G	H	K	L	P	Q	R	W	VOL.
INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	FT.&INS.	CU.YD.
36"	1'-6"	2'-0"	3'-3"	6'-8"	9'-1 1/2"	7'-3 3/4"	1'-4 7/8"	0'-9 3/4"	3'-4 7/8"	5'-5 3/4"	5.87
42"	1'-6"	2'-0"	3'-3"	7'-2"	9'-10 1/2"	7'-9 3/4"	1'-6 3/8"	0'-9 3/4"	3'-10 1/2"	6'-7 3/4"	6.67
48"	1'-7"	2'-6"	3'-9"	8'-2"	10'-10"	8'-3 3/4"	1'-9 3/8"	0'-11 1/4"	4'-9"	7'-9 1/2"	9.11
60"	1'-7"	2'-6"	3'-9"	9'-2"	12'-4 1/2"	9'-3 3/4"	2'-0 3/4"	0'-11 1/4"	5'-9"	10'-1 1/4"	12.43
72"	1'-7"	2'-6"	3'-9"	10'-2"	13'-10 3/4"	10'-3 3/4"	2'-3 3/4"	0'-11 1/4"	6'-9"	12'-5"	16.30



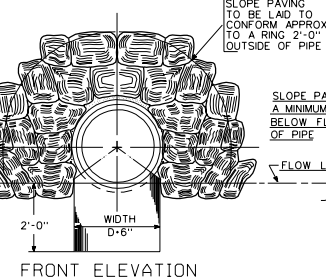
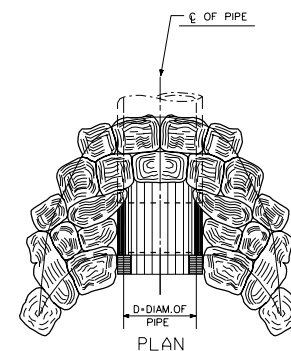
### REINFORCEMENT TO BE PLACED FOR 48" PIPE AND UP.

COST OF REINFORCING BARS TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR CLASS "A" CONCRETE.

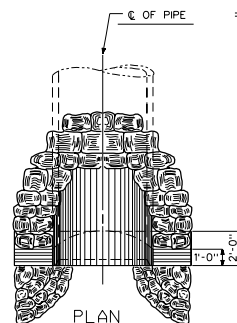
### NOTE

ALL CONSTRUCTION DIMENSIONS ARE NOMINAL.  
WHEN ONE ENDWALL IS TO BE USED FOR TWO PIPES, THE DIMENSIONS OF THAT ENDWALL SHALL CONFORM TO THAT REQUIRED FOR THE LARGER PIPE, EXCEPT THE DIMENSION "L" SHALL BE INCREASED BY THE OUTSIDE DIAMETER OF THE SMALLER PIPE PLUS ONE FOOT.

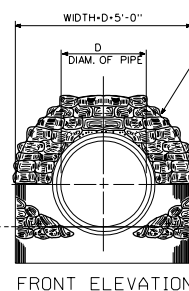
THESE ENDWALLS WILL BE USED ONLY AT LOCATIONS WHERE THEY WILL NOT BE A HAZARD TO VEHICLES THAT RUN OFF THE ROAD. IN NO CASE WILL THE LOCATION OF THESE ENDWALLS BE LESS THAN 30' FROM THE EDGE OF THE TRAVELED WAY.



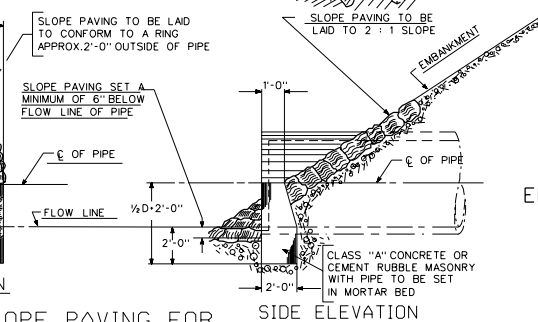
### FOOTING & SLOPE PAVING FOR PIPES 15" TO 30" DIAMETER



### ISOMETRIC VIEW



### FOOTING & SLOPE PAVING FOR PIPES 36" TO 72" DIAMETER



### ISOMETRIC VIEW

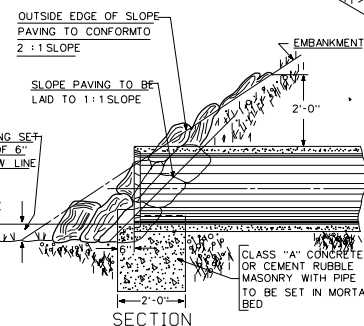


TABLE WITH QUANTITIES

D	VOLUME OF FOOTING	SLOPE * PAVING
INS	C.Y.	S.Y.
15"	0.26	3.2
18"	0.30	3.5
24"	0.37	4.0
30"	0.44	4.6

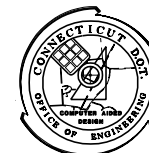
\* APPROXIMATE QUANTITY FOR MINIMUM CONDITION

TABLE WITH QUANTITIES

D	VOLUME OF FOOTING	SLOPE * PAVING
INS	C.Y.	S.Y.
36"	1.55	4.7
42"	1.69	5.4
48"	1.82	6.1
60"	2.08	7.6
72"	2.34	9.3

\* APPROXIMATE QUANTITY FOR MINIMUM CONDITION

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Cadd File: 05A2-1200,2001506.DGN



### ENDWALLS, SLOPE PAVED INLETS AND OUTLETS

PERKINS  
A. BOGAT  
T. McMAHON  
J.B. JENSEN  
D.L. COFFEY

3-42  
9-88  
1-5-89  
1-20-89  
9-25-89  
9-10-90